

Warm Up: 11/2/11

1)  $\{(-2,5), (3,4), (-1,5), (8,-3), (1,1)\}$  Inverse:

Function:  $y$  or  $N$  Inverse of function:  $y$  or  $D$

Domain of relation:  $\{-2, -1, 1, 3, 8\}$  Domain of inverse:  $\{1, 4, 5\}$

Range of relation:  $\{1, 4, 5\}$  Range of inverse:  $\{-2, -1, 1, 3, 8\}$

Find the inverse of the following function

2)  $f(x) = 7 - 2x$

$$y = 7 - 2x$$

$$\frac{x}{-2} = \frac{7-y}{-2}$$

$$\frac{x}{-2} = \frac{7-y}{-2}$$

$$x = \frac{7-y}{-2}$$

$$f^{-1}(x) = \frac{7-x}{-2}$$

6.  $f(x) = 1 - x^3$

$$y = 1 - x^3$$

$$x = 1 - y^3$$

$$\frac{x-1}{-1} = -y^3$$

$$\frac{x-1}{-1} = -y^3$$

$$\sqrt[3]{-x+1} = \sqrt[3]{-y^3}$$

$$\sqrt[3]{-x+1} = -y$$

$$f^{-1}(x) = \sqrt[3]{-x+1}$$

Nov 2-1:10 PM

8.  $f(x) = x^2 - 3$

$$y = x^2 - 3$$

$$x = \sqrt{y+3}$$

$y$  even problems

Inverse does not exist

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11.  $f(x) = 5x + 1$

$$g(x) = \frac{x-1}{5}$$

$(f \circ g)(x) = x$

$$f\left(\frac{x-1}{5}\right) = 5\left(\frac{x-1}{5}\right) + 1$$

$$= x - 1 + 1$$

$$= x$$

$(g \circ f)(x) = x$

$$g(5x+1) = \frac{(5x+1)-1}{5} = \frac{5x}{5} = x$$

yes Inverses

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HW

Pg 122

29-36 find

only  $f^{-1}(x)$

Nov 2-1:21 PM